

**REMARKS**

Prior to this response, claims 1, 13-20, and 23-24 were pending. Claims 19, 23 and 24 have been canceled without prejudice. By this response, claims 1 and 13 have been amended to define Applicants' invention with greater particularity. The amendments add no new matter, being fully disclosed by the Specification and original claims. Accordingly, claims 1, and 13-18 and 20 are currently pending and under consideration.

**The Rejection Under 35 U.S.C. §112, First Paragraph**

Applicants respectfully traverse the rejection of claims 1 and 13-20 under 35 U.S.C. §112, first paragraph, as containing subject matter that allegedly was not described in the specification so as to convey that Applicants were in possession of the claimed invention at the filing of the application. In particular, the Examiner asserts that the claim fails to indicate how the numbering of the signature nucleotides "corresponds" to the *E. coli* numbering system , such as by an indication of alignment or how it is achieved" (Office Action pages 3-4). Applicants have amended claims 1 and 13 to recite that the "signature nucleotides" in 16S rRNA of the invention isolated marine actinomycetes are "numbered by using the Ribosomal Database Project alignment with a sequence of *E. coli* 16S rRNA nucleotides 27-1492." Support for the amendment is found in the Specification at paragraph [0027] entitled "16S rRNA signature nucleotides" and in following Table 3. In particular Applicants disagree with the Examiner's statement:

In addition, applicant has not provided evidence to justify the automatic extrapolation of information pertaining to "MAR1" to all strains of Salinospora or whether this strain [is] freely available to the public. It is also noted that the touted information presented in Table 1 does not appear to be part of the as-filed specification.

(Office Action, page 3). In fact, Applicants teach that forty-five diverse Salinospora isolates were partially sequenced and confirmed to have all four signature nucleotides at positions 16S rRNA nucleotides 207-468 using the Ribosomal Database Project alignment. In addition, the signature nucleotide at position 1456 was discovered after subsequent 3' sequencing of the 16S rRNA gene from some twenty Salinospora isolates.

Regarding public availability, Applicants further teach that the 16S rRNA nucleotides of three strains, CNH643, CNH646 and CNH898 were sequenced nearly in their entirety and made

publicly available by deposit with GenBank under accession numbers AY0407619, AY040620 and AY040622, respectively (paragraphs [0026] and [0028]).

In addition, the information contained in Table 1 of the previous response (referred to by the Examiner above) is not new, but instead corroborates information from Table 3 of the Specification with the exception that Table 3 contains U's as pertaining to RNA, rather than T's as pertaining to DNA, as those of skill in the art would readily understand. In addition, in Table 1 of the previous response, the Salinospora, as defined by amended claim 1, are referred to as MAR1, a nomenclature not yet used at the time of filing the application and not used in the claims. Thus, the information in Table 1 of the previous response largely restates information contained in Table 3 of the specification as would be understood by those of skill in the art.

Thus, Applicants submit that those of skill in the art would recognize that Applicants were in possession of the invention as presently claimed at the time of filing the application. Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejection of claims 1 and 13-18 and 20 under the written description requirement of 35 U.S.C. ¶112, first paragraph.

#### **The Rejection under 35 U.S.C. ¶ 112, Second Paragraph**

Applicants respectfully traverse the rejection of claims 1 and 13-20 under 35 U.S.C. ¶ 112, second paragraph, as allegedly failing to particularly point out and distinctly claim the subject matter that the Applicants regard as the invention. The Office Action alleges that claims 1 and 13 are vague and indefinite in the recitation of certain positions in the 16S rRNA without an indication of the context of these positions. In particular, the Examiner asserts that that the respective sequences in Salinospora are not fully identified.

To more particularly describe the claimed subject matter, claims 1 and 13 have been amended and now require that the position numbers of the "signature nucleotides" in the 16S rRNA of the claimed Salinospora group are "numbered by using the Ribosomal Database Project alignment with a sequence of *E. coli* 16S rRNA nucleotides 27-1492." Applicants submit that those of skill in the art would readily understand the meaning of the claim language given the description of the Specification with the common knowledge of the art at the filing of the application. As Applicants have previously argued, the Ribosomal Database Project's alignment program was publicly available at the filing of the application and those of skill in the art would

understand that *Escherichia coli* 16S rRNA gene sequence as an alignment reference for describing the 16S rRNA gene sequence various prokaryotes was well known in the art at the filing of the application. Applicants have already provided the Examiner with a copy of Lane, et al., Proc. Natl. Acad. Sci. USA, vol. 82 (1985), pp. 6955-6959, which describes the practice in the art of aligning regions of homology within a 16S rRNA gene sequence and a template 16S rRNA sequence of *E. coli* to provide a system for comparing and meaningfully referring between prokaryotic 16S rRNA sequences as is fully described in the art.

Thus, Applicants respectfully submit that those of skill in the art would understand the metes and bounds of the Salinospora clade, as defined by amended claims 1, 13-18 and 20. Accordingly, reconsideration and withdrawal of the rejection under 35 U.S.C. ¶ 112, second paragraph, are respectfully requested.

**The Rejection under 35 U.S.C. ¶112, First Paragraph**

Applicants respectfully traverse the rejection of claim 19 under 35 U.S.C. §112, first paragraph, as containing subject matter that allegedly was not described in the specification so as enable those of skill in the art to make and use the invention without undue experimentation. The Examiner asserts that it is not clear that the description of the strain of Salinospora that produces Salinosporamide A was readily available to the public at the time of the invention because the information regarding deposit with ATCC allegedly does not meet all requirements of 37 CFR 1.801-1.809. In addition, the Examiner alleges that there is no indication regarding whether the strain whose deposit is described at paragraph [0011] of the Specification produces Salinosporamide A.

Claim 19 has been cancelled in the present application, rendering moot the rejection of claim 19 under the written description requirement of 35 U.S.C. §112, first paragraph. Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejection.

**CONCLUSION**

In view of the amendments and the above remarks, it is submitted that the claims are in condition for allowance and a notice to that effect is respectfully requested. The Examiner is invited to contact Applicant's undersigned representative if there are any questions relating to this application.

Enclosed is a check number 570720 in the amount of \$55.00 for the extension fee. No further fees are deemed necessary in connection with this filing. However, if any other fee is deemed necessary, the Commissioner is authorized to charge, or apply any credits, to Deposit Account 07-1896.

Respectfully submitted,



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